

SEQUENCE LISTING

<110> Long, Li
 Luqman, Mohammad
 Yabannavar, Asha
 Zaror, Isabel

<120> USE OF ANTAGONIST ANTI-CD40 ANTIBODIES
 FOR TREATMENT OF AUTOIMMUNE AND INFLAMMATORY DISEASE AND ORGAN TRANSPLANT
 REJECTION

<130> PP23725.002 (309941)

<140> US/10/576,943

<141> 2006-04-21

<150> 60/565,710

<151> 2004-04-27

<150> 60/525,579

<151> 2003-11-26

<150> 60/517,337

<151> 2003-11-04

<160> 12

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 720

<212> DNA

<213> Artificial Sequence

<220>

<223> Coding sequence for light chain of CHIR-12.12
 human anti-CD40 antibody

<221> CDS

<222> (1)...(720)

<400> 1

atg	gcg	ctc	cct	gct	cag	ctc	ctg	ggg	ctg	cta	atg	ctc	tgg	gtc	tct	48
Met	Ala	Leu	Pro	Ala	Gln	Leu	Leu	Gly	Leu	Leu	Met	Leu	Trp	Val	Ser	
1				5				10					15			

gga	tcc	agt	ggg	gat	att	gtg	atg	act	cag	tct	cca	ctc	tcc	ctg	acc	96
Gly	Ser	Ser	Gly	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Thr	
			20					25					30			

gtc	acc	cct	gga	gag	ccg	gcc	tcc	atc	tcc	tgc	agg	tcc	agt	cag	agc	144
Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	
		35					40				45					

ctc	ctg	tat	agt	aat	gga	tac	aac	tat	ttg	gat	tgg	tac	ctg	cag	aag	192
Leu	Leu	Tyr	Ser	Asn	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp	Tyr	Leu	Gln	Lys	

50	55	60	
cca ggg cag tct cca cag gtc ctg atc tct ttg ggt tct aat cgg gcc			240
Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala			
65	70	75	80
tcc ggg gtc cct gac agg ttc agt ggc agt gga tca ggc aca gat ttt			288
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe			
	85	90	95
aca ctg aaa atc agc aga gtg gag gct gag gat gtt ggg gtt tat tac			336
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr			
	100	105	110
tgc atg caa gct cga caa act cca ttc act ttc ggc cct ggg acc aaa			384
Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys			
	115	120	125
gtg gat atc aga cga act gtg gct gca cca tct gtc ttc atc ttc ccg			432
Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro			
	130	135	140
cca tct gat gag cag ttg aaa tct gga act gcc tct gtt gtg tgc ctg			480
Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu			
	145	150	155
ctg aat aac ttc tat ccc aga gag gcc aaa gta cag tgg aag gtg gat			528
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp			
	165	170	175
aac gcc ctc caa tcg ggt aac tcc cag gag agt gtc aca gag cag gac			576
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp			
	180	185	190
agc aag gac agc acc tac agc ctc agc agc acc ctg acg ctg agc aaa			624
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys			
	195	200	205
gca gac tac gag aaa cac aaa gtc tac gcc tgc gaa gtc acc cat cag			672
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln			
	210	215	220
ggc ctg agc tcg ccc gtc aca aag agc ttc aac agg gga gag tgt tag			720
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys *			
	225	230	235

<210> 2

<211> 239

<212> PRT

<213> Artificial Sequence

<220>

<223> Light chain of CHIR-12.12 human anti-CD40 antibody

<400> 2

Met	Ala	Leu	Pro	Ala	Gln	Leu	Leu	Gly	Leu	Leu	Met	Leu	Trp	Val	Ser
1				5				10						15	
Gly	Ser	Ser	Gly	Asp	Ile	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Thr
			20					25					30		
Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser
		35					40				45				
Leu	Leu	Tyr	Ser	Asn	Gly	Tyr	Asn	Tyr	Leu	Asp	Trp	Tyr	Leu	Gln	Lys
	50					55				60					
Pro	Gly	Gln	Ser	Pro	Gln	Val	Leu	Ile	Ser	Leu	Gly	Ser	Asn	Arg	Ala
65					70					75				80	
Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe
				85				90						95	
Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr
			100					105					110		
Cys	Met	Gln	Ala	Arg	Gln	Thr	Pro	Phe	Thr	Phe	Gly	Pro	Gly	Thr	Lys
		115					120					125			
Val	Asp	Ile	Arg	Arg	Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro
	130					135					140				
Pro	Ser	Asp	Glu	Gln	Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val	Val	Cys	Leu
145					150					155				160	
Leu	Asn	Asn	Phe	Tyr	Pro	Arg	Glu	Ala	Lys	Val	Gln	Trp	Lys	Val	Asp
			165					170						175	
Asn	Ala	Leu	Gln	Ser	Gly	Asn	Ser	Gln	Glu	Ser	Val	Thr	Glu	Gln	Asp
		180						185					190		
Ser	Lys	Asp	Ser	Thr	Tyr	Ser	Leu	Ser	Ser	Thr	Leu	Thr	Leu	Ser	Lys
	195						200					205			
Ala	Asp	Tyr	Glu	Lys	His	Lys	Val	Tyr	Ala	Cys	Glu	Val	Thr	His	Gln
	210					215					220				
Gly	Leu	Ser	Ser	Pro	Val	Thr	Lys	Ser	Phe	Asn	Arg	Gly	Glu	Cys	
225					230					235					

<210> 3
 <211> 2016
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Coding sequence for heavy chain of CHIR-12.12
 human anti-CD40 antibody (with introns)

<400> 3
 atggagtttg ggctgagctg ggttttcctt gttgctattt taagaggtgt ccagtgtcag 60
 gtgcagtttg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct gagactctcc 120
 tgtgcagcct ctggattcac cttcagtagc tatggcatgc actgggtccg ccagggtcca 180
 ggcaaggggc tggagtgggt ggcagttata tcatatgagg aaagtaatag ataccatgca 240
 gactccgtga agggccgatt caccatctcc agagacaatt ccaagatcac gctgtatctg 300
 caaatgaaca gcctcagaac tgaggacacg gctgtgtatt actgtgcgag agatgggggt 360
 atagcagcac ctgggcctga ctactggggc caggggaacc tggtcaccgt ctctcagca 420
 agtaccaagg gcccatcctg cttccccctg gcgcccgtga gcaagagcac ctctgggggc 480
 acagcggccc tgggctgcct ggtcaaggac tacttccccg aaccgggtgac ggtgtcgtgg 540
 aactcaggcg ccctgaccag cggcgtgcac accttcccg ctgtcctaca gtcctcagga 600
 ctctactccc tcagcagcgt ggtgaccgtg ccctccagca gcttgggcac ccagacctac 660
 atctgcaacg tgaatcaca gccagcaac accaagggtg acaagagagt tgggtgagagg 720
 ccagcacagg gagggagggt gtctgctgga agccaggctc agcgctcctg cctggacgca 780
 tcccggtat gcagtcccag tccagggcag caaggcaggc cccgtctgcc tcttcacccg 840
 gaggcctctg ccgcgccac tcatgctcag ggagagggtc ttctggcttt ttcccaggc 900

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tctgggcagg cacaggctag gtgcccctaa cccaggccct gcacacaaag gggcaggtgc 960
tggtgctcaga cctgccaaaga gccatatccg ggaggaccct gcccctgacc taagcccacc 1020
ccaaaggcca aactctccac tccctcagct cggacacctt ctctcctccc agattccagt 1080
aactcccaat cttctctctg cagagcccaa atcttgtgac aaaactcaca catgcccacc 1140
gtgcccaggt aagccagccc aggcctcgcc ctccagctca aggcgggaca ggtgccctag 1200
agtagcctgc atccagggac aggcccacgc cgggtgctga cacgtccacc tccatctctt 1260
cctcagcacc tgaactcctg gggggaccgt cagtcttctt cttcccccca aaacccaagg 1320
acaccctcat gatctcccgg acccctgagg tcacatgcgt ggtggtggac gtgagccacg 1380
aagaccctga ggtcaagttc aactggtacg tggacggcgt ggaggtgcat aatgccaaaga 1440
caaagccgcy ggaggagcag tacaacagca cgtaccgtgt ggtcagcgtc ctcaccgtcc 1500
tgcaccagga ctggctgaat ggcaaggagt acaagtgcaa ggtctccaac aaagccctcc 1560
cagcccccat cgagaaaacc atctccaaag ccaaagggtg gaccctggg gtgaggggc 1620
cacatggaca gaggccggct cggccaccc tctgccctga gagtgaccgc tgtaccaacc 1680
tctgtcccta cagggcagcc ccgagaacca cagggtgtaca ccctgcccc atcccgagg 1740
gagatgacca agaaccaggt cagcctgacc tgctgtgtca aaggcttcta tcccagcgac 1800
atcgccgtgg agtgggagag caatgggcag ccggagaaca actacaagac cagcctccc 1860
gtgctggact ccgacggctc cttcttcttc tatagcaagc tcaccgtgga caagagcagg 1920
tggcagcagg ggaacgtctt ctcatgctcc gtgatgcatg aggtcttgca caaccactac 1980
acgcagaaga gcctctccct gtctccgggt aatga 2016

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<210> 4

<211> 469

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of CHIR-12.12 human anti-CD40 antibody

<400> 4

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Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly
1           5           10           15
Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
20           25           30
Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35           40           45
Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50           55           60
Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn Arg Tyr His Ala
65           70           75           80
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile
85           90           95
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val
100          105          110
Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro Gly Pro Asp Tyr
115          120          125
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
130          135          140
Pro Ser Val Phe Pro Leu Ala Pro Ala Ser Lys Ser Thr Ser Gly Gly
145          150          155          160
Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
165          170          175
Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
180          185          190
Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
195          200          205
Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val
210          215          220

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Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys
 225 230 235 240
 Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
 245 250 255
 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
 260 265 270
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
 275 280 285
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
 290 295 300
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
 305 310 315 320
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
 325 330 335
 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
 340 345 350
 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
 355 360 365
 Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
 370 375 380
 Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
 385 390 395 400
 Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 405 410 415
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
 420 425 430
 Thr Val Asp Lys Ser Arg Trp Gln Gly Asn Val Phe Ser Cys Ser
 435 440 445
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 450 455 460
 Leu Ser Pro Gly Lys
 465

<210> 5

<211> 469

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of variant of CHIR-12.12 human
anti-CD40 antibody

<400> 5

Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly
 1 5 10 15
 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
 20 25 30
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60
 Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn Arg Tyr His Ala
 65 70 75 80
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile
 85 90 95
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val

			100					105					110				
Tyr	Tyr	Cys	Ala	Arg	Asp	Gly	Gly	Ile	Ala	Ala	Pro	Gly	Pro	Asp	Tyr		
		115					120					125					
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly		
	130					135					140						
Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly		
145					150					155					160		
Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val		
			165						170						175		
Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe		
			180					185					190				
Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val		
		195					200					205					
Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val		
	210					215					220						
Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Arg	Val	Glu	Pro	Lys		
225					230					235					240		
Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu		
			245					250						255			
Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr		
			260				265						270				
Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val		
	275						280					285					
Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val		
	290					295				300							
Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser		
305					310					315					320		
Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu		
			325					330						335			
Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala		
			340				345						350				
Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro		
	355						360					365					
Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln		
	370					375					380						
Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala		
385					390					395					400		
Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr		
			405					410					415				
Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu		
		420					425					430					
Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser			
	435						440				445						
Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser		
	450					455					460						
Leu	Ser	Pro	Gly	Lys													
465																	

<210> 6

<211> 239

<212> PRT

<213> Artificial Sequence

<220>

<223> Light chain of CHIR-5.9 human anti-CD40 antibody

<400> 6

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Met Ala Leu Leu Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
 1          5          10          15
Gly Ser Ser Gly Ala Ile Val Met Thr Gln Pro Pro Leu Ser Ser Pro
 20          25          30
Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
 35          40          45
Leu Val His Ser Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg
 50          55          60
Pro Gly Gln Pro Pro Arg Leu Leu Ile Tyr Lys Phe Phe Arg Arg Leu
 65          70          75          80
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe
 85          90          95
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
100          105          110
Cys Met Gln Val Thr Gln Phe Pro His Thr Phe Gly Gln Gly Thr Arg
115          120          125
Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
130          135          140
Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
145          150          155          160
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp
165          170          175
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp
180          185          190
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys
195          200          205
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln
210          215          220
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225          230          235
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<210> 7

<211> 474

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain of CHIR-5.9 human anti-CD40 antibody

<400> 7

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Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Leu Ala Val Leu Gln Gly
 1          5          10          15
Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 20          25          30
Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe
 35          40          45
Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu
 50          55          60
Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser
 65          70          75          80
Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser
 85          90          95
Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
100          105          110
Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp Tyr Tyr Tyr Tyr
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LEGAL02/30176301v1

450
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470

460

<210> 9
<211> 612
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(612)

<221> misc_feature
<222> (0)...(0)
<223> Coding sequence for short isoform of human CD40

<400> 9
atg gtt cgt ctg cct ctg cag tgc gtc ctc tgg ggc tgc ttg ctg acc 48
Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr
1 5 10 15

gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
20 25 30

ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
35 40 45

agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
50 55 60

agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
65 70 75 80

aaa tac tgc gac ccc aac cta ggg ctt cgg gtc cag cag aag ggc acc 288
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
85 90 95

tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg 336
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
100 105 110

agt gag gcc tgt gag agc tgt gtc ctg cac cgc tca tgc tcg ccc ggc 384
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly
115 120 125

ttt ggg gtc aag cag att gct aca ggg gtt tct gat acc atc tgc gag 432
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu
130 135 140

ccc tgc cca gtc ggc ttc ttc tcc aat gtg tca tct gct ttc gaa aaa 480
Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys

145		150		155		160	
tgt cac cct tgg aca agg tcc cca gga tgc gct gag agc cct ggt ggt	528						
Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly							
		165		170		175	
gat ccc cat cat ctt cgg gat cct gtt tgc cat cct ctt ggt gct ggt	576						
Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly							
		180		185		190	
ctt tat caa aaa ggt ggc caa gaa gcc aac caa taa	612						
Leu Tyr Gln Lys Gly Gly Gln Glu Ala Asn Gln *							
		195		200			

<210> 10
 <211> 203
 <212> PRT
 <213> Homo sapiens

<400> 10

Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr	
1 5 10 15	
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu	
20 25 30	
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val	
35 40 45	
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu	
50 55 60	
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His	
65 70 75 80	
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr	
85 90 95	
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr	
100 105 110	
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly	
115 120 125	
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu	
130 135 140	
Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys	
145 150 155 160	
Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly	
165 170 175	
Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly	
180 185 190	
Leu Tyr Gln Lys Gly Gly Gln Glu Ala Asn Gln	
195 200	

<210> 11
 <211> 834
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(834)

<221> misc_feature

<222> (0)...(0)

<223> Coding sequence for long isoform of human CD40

<400> 11

atg gtt cgt ctg cct ctg cag tgc gtc ctc tgg ggc tgc ttg ctg acc	48
Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr	
1 5 10 15	
gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta	96
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu	
20 25 30	
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Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val	
35 40 45	
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Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu	
50 55 60	
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Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His	
65 70 75 80	
aaa tac tgc gac ccc aac cta ggg ctt cgg gtc cag cag aag ggc acc	288
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr	
85 90 95	
tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg	336
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr	
100 105 110	
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Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly	
115 120 125	
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Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu	
130 135 140	
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Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys	
145 150 155 160	
tgt cac cct tgg aca agc tgt gag acc aaa gac ctg gtt gtg caa cag	528
Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln	
165 170 175	
gca ggc aca aac aag act gat gtt gtc tgt ggt ccc cag gat cgg ctg	576
Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu	
180 185 190	
aga gcc ctg gtg gtg atc ccc atc atc ttc ggg atc ctg ttt gcc atc	624
Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile	
195 200 205	

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ctc ttg gtg ctg gtc ttt atc aaa aag gtg gcc aag aag cca acc aat 672
Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn
210 215 220

aag gcc ccc cac ccc aag cag gaa ccc cag gag atc aat ttt ccc gac 720
Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp
225 230 235 240

gat ctt cct ggc tcc aac act gct gct cca gtg cag gag act tta cat 768
Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His
245 250 255

gga tgc caa ccg gtc acc cag gag gat ggc aaa gag agt cgc atc tca 816
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260 265 270

gtg cag gag aga cag tga 834
Val Gln Glu Arg Gln *
275

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<212> PRT
<213> Homo sapiens

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20 25 30
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
35 40 45
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
50 55 60
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
65 70 75 80
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
85 90 95
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr
100 105 110
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly
115 120 125
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu
130 135 140
Pro Cys Pro Val Gly Phe Ser Asn Val Ser Ser Ala Phe Glu Lys
145 150 155 160
Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln
165 170 175
Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu
180 185 190
Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile
195 200 205
Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn
210 215 220
Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp

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225					230					235				240
Asp	Leu	Pro	Gly	Ser	Asn	Thr	Ala	Ala	Pro	Val	Gln	Glu	Thr	Leu
				245					250					255
Gly	Cys	Gln	Pro	Val	Thr	Gln	Glu	Asp	Gly	Lys	Glu	Ser	Arg	Ile
			260					265					270	
Val	Gln	Glu	Arg	Gln										
			275											